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REMARKS

To begin with, Applicants iterate and incorporate herein by reference all of the points made in the amendment and response mailed to the PTO on March 21, 2003. Those remarks are supplemented by the following additional reasons why Claims 1, 2, and 4 are entitled to allowance. In this connection please note that Claim 3 was cancelled in a prior response which has been entered.

The sole rejection in the case is the rejection under 35 USC 103(a) on Mack et al. U.S. 5,457,248 (Mack). We submit that in addition to the reasons presented previously, no *prima facie* case of obviousness exists here, or can exist here, because the Mack reference itself shows that if by chance one of ordinary skill in the art were to consider the matter of occluded free bromine in the Mack water-based filter cakes despite the lack of any express reference to the subject in the reference, the artisan could not conclude from the Mack disclosure that such filter cakes would have low occluded free bromine levels. Indeed, in this hypothetical situation such artisan would be led by the Mack teachings and results to the conclusion that the occluded free bromine in such Mack filter cakes would necessarily be high.

In particular, Example 1 of Mack produces a wet cake from a water slurry which has been stripped of bromine by pumping the brominated reaction mixture into water at 99°C "to remove the bromine" (Column 11, lines 34-37). This is the preferred procedure described by Mack at Column 5, lines 11-16. In Mack Example 1, the slurry was then filtered to produce a wet cake which, after washing with water and drying in an oven at 120°C to constant weight, gave a tan solid. This solid is shown to have a very high Yellowness Index of 73.4. Clearly, the solids would thus be considered to contain a substantial quantity of occluded free bromine, even though Mack *et al* may not have

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appreciated this. In any event, the reference is in fact completely devoid of any express teachings concerning occluded free bromine in wet cakes from aqueous systems.

In sharp contrast, in accordance with Applicants' Example 1, the bromination product after bromine stripping in hot water at about 58°C and treatment in water with a base and a small amount of surfactant, formed a wet cake as claimed comprising water and solid brominated diphenylethane product containing a predominate amount of decabromodiphenylethane, which wet cake after drying in an oven at 205°C for 2 seconds gave a product which had, prior to oven aging, Yellowness Indexes within the range of about 12.5 to about 17.5. Thus, on a conservative basis, Applicants provide in Example 1 a wet cake which before oven aging had a Yellowness Index that was over 75% less than that of Mack Example 1.

The Examiner's reference to Examples 2-4 to support the Final Rejection is of no avail as the Mack reference itself shows. In Mack Examples 2-4 the bromination product was again pumped into hot water which this time contained treating agents glycolic acid, sodium gluconate, or EDTA, which are metal chelating agents or complexes which were not used in any of Applicants Examples, and which according to Mack at Column 5, lines 20-30 improve the color characteristics of brominated diphenylalkanes. Yet, even after roasting the resultant product at 200°C for 30 minutes, the product (not the wet cake) had Yellowness Indexes ranging from 14.8 to 16.1.

Therefore Applicants' wet cake after drying but prior to oven aging gave samples having Yellowness Index ratings of about 12.5 to about 17.5 whereas the dried and oven roasted products of Mack -- not dried samples from a wet cake -- gave Yellowness Index values in the same range. Moreover, in achieving an oven roasted product that had

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Yellowness Indexes in this range, the Mack reference utilized prior treatments with a chelating or complexing agent, neither of which was used by Applicants when forming the claimed compositions. And even so, it is clear from Mack Examples 2-4 that the Mack wet cake had to have had a higher Yellowness Index before the 200°C roasting for 30 minutes. Such roasting clearly would remove occluded free bromine from the product sample, even though Mack et al may not have appreciated this, and provide no express teachings about occluded free bromine in wet cakes from aqueous systems. Thus there is no reasonable expectation that the treatment in Mack Examples 2-4 would give wet cakes having low amounts of occluded free bromine content. Indeed, there is every reason for one skilled in the art to have concluded that whatever the occluded free bromine content may have been, it was clearly well above the value in the final product after roasting at 200°C for 30 minutes. Accordingly, one of the major premises of the Final Rejection is seen to be refuted by the very reference upon which it is predicated.

The foregoing is further supported by Mack Example 5, wherein the bromination product was pumped into water at 99°C which contained sodium gluconate complexing agent. After filtering and washing the filter cake with water and oven drying for 14 hours at 120°C, the filter cake yielded a sample having a yellowness index of 45 which again is much higher than the results shown by Applicants for their wet cakes. Here again if by chance the artisan of ordinary skill in the art were to consider the question of occluded free bromine in the Mack wet cake despite the complete absence of any express teachings concerning this in the Mack patent, the only sensible conclusion possible from this result is that the Mack wet cake had a high content of occluded free bromine. This result when compared with Mack Examples 2-4 would clearly indicate to the above artisan that the roasting at 200°C for 30 minutes in Mack Examples 2-4 was responsible for achieving a

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significantly lower Yellowness Index in the product (not the wet cake).

Thus the Mack reference itself provides convincing evidence that if one were to consider the question of occluded free bromine content in the Mack filter cakes -- a most unlikely situation in view of the absence of any express teachings in Mack about occluded free bromine in a water-wet filter cake, and the emphasis placed in Mack on the downstream treatment of the product at high temperature in an aromatic solvent to improve yellowness index -- the inescapable conclusion would have to be that the occluded free bromine content of the water-wet Mack wet cakes would be high, because dried, unroasted samples of such wet cakes gave yellowness indexes of 73.4 (Example 1), and 45 (Example 5), and "a tan solid" (Example 8 at line 52). We therefore submit that there is no basis in Mack to support the Final Rejection.

A further error in the Final Rejection is the conclusory statement that "distilling off various amounts of excess bromine by the prior art process resulting in the formation of wet cakes having different amounts of occluded bromine would be well within the level of skill of the ordinary artisan." We respectfully point out that this is an improper standard for use in support of a rejection under 35 USC 103(a). As the Board stated in *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993):

At best, the Examiner's comments regarding obviousness amount to an assertion that one of ordinary skill in the relevant art would have been able to arrive at appellant's invention because he had the necessary skills to carry out the requisite process steps. This is an inappropriate standard for obviousness . . . That which is within the capabilities of one skilled in the art is not synonymous with obviousness . . .

Another deficiency in the Final Rejection is the fact that there is no motivation in Mack to make any changes in the technology therein described. As the reference itself makes clear e.g., at Column 5, line 56 to Column 6, line 6, the treatment of the products by

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dissolving them in an aromatic solvent at high temperature is capable of providing brominated diphenylalkane products having Yellowness Indexes in the range of about 1 to about 8, with Yellowness Indexes in the very low range of about 1 to about 5 being readily obtained. In view of this teaching there is clearly no incentive or motivation in Mack for one skilled in the art to look back to the Mack water-wet wet cake stage as a place to look for improvements in Yellowness Index, muchless reductions in occluded free bromine.

As noted in the prior response, MPEP §2142 advises as follows regarding what is required before the Examiner can establish *prima facie* obviousness:

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure.”

Taking these three requirements one at a time:

- 1) It is deemed clear from the above that there is no suggestion or motivation, either in the Mack reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the Mack reference with respect to wet cakes as here claimed. Indeed, and as made manifestly clear hereinabove, if one were to even consider the matter of quality of the water-containing wet cakes of Mack — despite the lack of any apparent interest, concern or express teaching regarding the same in Mack — the reference itself would lead to the inescapable conclusion that the water-wet cakes of Mack must have high occluded free bromine contents because of their high yellowness indexes as shown by Mack itself.
- 2) Since there is no suggestion or motivation to modify Mack in a direction leading toward Applicants' claimed wet cakes containing water, and since a reading of Mack does not lead to making any modification of the water-wet wet cakes of Mack in view of the high temperature treatment in aromatic solvents described by Mack, there is no modification about which to have any reasonable expectation of success.
- 3) Because there is no teaching or suggestion in Mack to make such claimed

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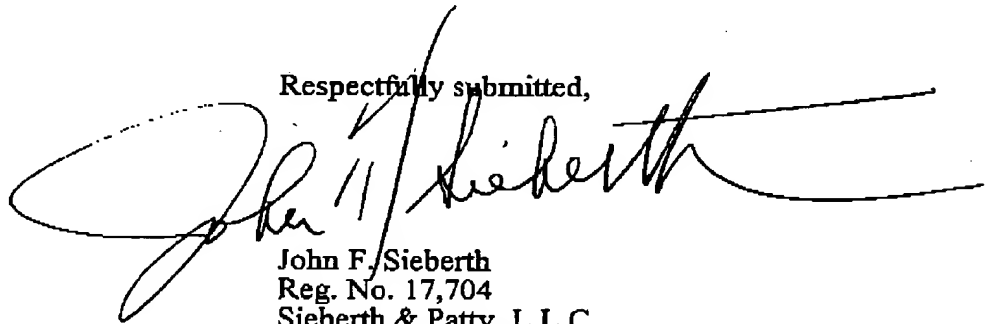
modification and there is no such modification in Mack about which a reasonable expectation of success could apply, both of these features are absent from the reference and can only have been based on Applicants' disclosure.

Ergo, no *prima facie* obviousness has been established.

We appreciate the suggestion in the final paragraph of the Final Rejection. However, it is well settled that in the absence of *prima facie* obviousness, there is no need for an applicant to make any showing.

Accordingly, for the reasons given above and in the previous response it is felt that the Final Rejection is erroneous and insupportable since no *prima facie* obviousness exists here, and the Final Rejection is not only not supported by the reference upon which it is based, but is actually refuted by the reference upon which it is based. Moreover, a major position given in support of the Final Rejection is in error as it based on an inappropriate standard for obviousness. It is therefore requested that the Final Rejection be reconsidered and withdrawn leading to a prompt allowance of Claims 1, 2, and 4. Such action is earnestly solicited.

Respectfully submitted,



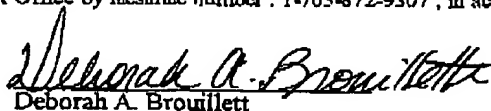
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6-20-2003
Date


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